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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,811	02/27/2004	Suda Kazuyuki	51557	7845

7590 05/04/2006

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EXAMINER
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WONG, EDNA

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/788,811

Applicant(s)

KAZUYUKI ET AL.

Examiner

Edna Wong

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date February 23, 2006.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

This is in response to the Amendment dated March 15, 2006. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Arguments***

#### **Specification**

The disclosure has been objected to because of minor informalities.

The objection of the disclosure has been withdrawn in view of Applicants' amendment.

#### **Claim Rejections - 35 USC § 112**

Claims **1-4** have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claims 1-4 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment.

#### **Claim Rejections - 35 USC § 103**

I. Claims **1-3** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 7-138782** ('782).

The rejection of claims 1-3 under 35 U.S.C. 103(a) as being unpatentable over

JP 7-138782 ('782) has been withdrawn in view of Applicants' amendment.

II. Claim 4 has been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 7-138782** ('782) as applied to claims 1-3 above.

The rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over JP 7-138782 ('782) as applied to claims 1-3 above has been withdrawn in view of Applicants' amendment.

III. Claims 1-3 have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Saitoh et al.** (US Patent No. 6,500,327 B1).

The rejection of claims 1-3 under 35 U.S.C. 103(a) as being unpatentable over Saitoh et al. has been withdrawn in view of Applicants' amendment.

IV. Claim 4 has been rejected under 35 U.S.C. 103(a) as being unpatentable over **Saitoh et al.** (US Patent No. 6,500,327 B1) as applied to claims 1-3 above.

The rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over Saitoh et al. as applied to claims 1-3 above has been withdrawn in view of Applicants' amendment.

***Response to Amendment***

***Claim Rejections - 35 USC § 103***

*Solution*

I. Claims **1 and 5-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 11-181589 ('589)**.

JP '589 teaches an electrolytic tin-plating solution, having a pH value of 1.5-6.0 (= pH of 3.6-6.6) [page 2, [0016]] and comprising:

- (1) 5-60 g/L of tin(II) ion (= 5 g/l Sn) [page 2, [0012]; and page 3, Table, Example 4],
- (2) a complexing agent (= stabilizer) [page 2, [0014]],
- (3) one or more non-ionic surfactants chosen from polyoxyethylene nonylphenyl ether and/or ethoxylate  $\alpha$  naphthol (page 2, [0015]), and
- (4) bismuth(III) ion (= from Bi citrate) [pages 1-2, [0010]; and page 2, [0013]].

The surfactant is a nonionic surfactant (= polyoxyethylene nonylphenyl ether) [page 2, [0015]].

The non-ionic surfactants range from 0.1-20 g/L (= 0.2-5.0 g/l of polyoxyethylene nonylphenyl ether) [page 2, [0019]].

The non-ionic surfactants range from 0.5-5.0 g/L (= 0.2-5.0 g/l of polyoxyethylene nonylphenyl ether) [page 2, [0019]].

The solution of JP '589 differs from the instant invention because JP '589 does not disclose the following:

- a. 0.01-0.5 g/L of bismuth(III) ion, as recited in claim 1.

JP '589 teaches that the concentration of each component in the plating liquid changes with the type of alloy (page 2, [0019]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the concentration of the bismuth(III) ion described by JP '589 to 0.01-0.5 g/L of bismuth(III) ion because the concentration of each component in the plating liquid changes with the type of alloy used as taught by JP '589 (page 2, [0019]).

b. One or more non-ionic surfactants chosen from polyoxyethylene lauryl ether, polyoxyethylene polyoxypropylene glycol with an average of 10 units of ethylene oxide and an average of 4 units of propylene oxide and polyoxyethylene nonyl phenyl ether with an average of 9 units of ethylene oxide, as recited in claim 1.

JP '589 teaches polyoxyethylene nonylphenyl ether (page 2, [0015]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the non-ionic surfactant described by JP '589 with polyoxyethylene nonyl phenyl ether with an average of 9 units of ethylene oxide because structural relationships may provide the requisite motivation or suggestion to modify known compounds to obtain new compounds. For example, a prior art compound may suggest its homologs because homologs often have similar properties and therefore chemists of ordinary skill would ordinarily contemplate making them to try to obtain compounds with improved properties (MPEP § 2144.08(II)(A)(4)(c) and

§2144.09).

II. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 11-181589** ('589) as applied to claims 1 and 5-6 above, and further in view of **JP 7-138782** ('782).

JP '589 is as applied above and incorporated herein.

The solution of JP '589 differs from the instant invention because JP '589 does not disclose wherein the electrolytic tin-plating solution further comprises a conducting salt, an anode-dissolving agent or an antioxidant, as recited 2.

Like JP '589, JP '782 teaches a tin-bismuth alloy electroplating bath. JP '782 teaches that the plating bath can be made to contain alkali-metal salts, an alkaline earth metal salt, ammonium salt, organic amine salts, etc. in order to make good energization nature at the time of plating (page 2, [0008]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by JP '589 with the electrolytic tin-plating solution further comprises a conducting salt, an anode-dissolving agent or an antioxidant because a conducting salt would have made good energization nature at the time of plating as taught by JP '782 (page 2, [0008]).

#### *Method*

II. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 11-**

**181589** ('589) as applied to claims 1 and 5-6 above.

JP '589 is as applied above and incorporated herein.

JP '589 also teaches a method for electrolytic tin plating, characterized by using the electrolytic tin-plating solution (= electroplating liquid) of claim 1 for electrolytic tin plating (= tin-bismuth alloy) on electronic parts (= electrical and electric equipment, electronic parts, etc.) [page 4, [0025]].

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

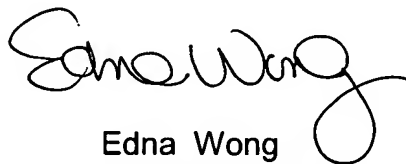
Any inquiry concerning this communication or earlier communications from the



examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
April 29, 2006